

CLAIM AMENDMENTS

Claims 1-39 (cancelled).

Claim 40 (new): An optical input preamplifier, comprising:

a photodiode for converting an input optical signal into a photocurrent as an output current;

means for pre-amplifying said output current from said photodiode, wherein said output current is pre-amplified to form a pre-amplifying current, wherein said pre-amplifying means comprises a feedback circuit creating a feedback signal in responsive to said output current from said photodiode to substantially form said pre-amplifying current, and an emitting follower electrically connected to said feedback circuit to output said pre-amplifying current therefrom; and

an output circuit device converting said pre-amplifying current into an output signal, wherein said feedback circuit comprises a first transistor electrically connected with said photodiode and a second transistor electrically coupled with said first transistor such that when said output current from said photodiode is transmitted to said second transistor through said first transistor, said second transistor forms said feedback signal and transmits back to said first transistor so as to form said pre-amplifying current, wherein said first transistor is a NPN transistor and said second transistor is a PNP transistor, wherein said second transistor is electrically coupled with said first transistor to form a positive feedback circuit of said feedback circuit.

Claim 41 (new): The optical input preamplifier, as recited in claim 40, wherein said feedback circuit further comprises a plurality of diodes electrically coupling between said first and second transistors, wherein said diodes are electrically connected in a series connection.

Claim 42 (new): The optical input preamplifier, as recited in claim 40, wherein said emitting follower comprises a third transistor electrically coupled with said first transistor to receive said pre-amplifying current therefrom and an inverting amplifier for outputting said pre-amplifying current from said third transistor.

Claim 43 (new): The optical input preamplifier, as recited in claim 42, wherein said third transistor is a NPN transistor electrically coupled with said first transistor to direct said pre-amplifying current to said inverting amplifier.

Claim 44 (new): The optical input preamplifier, as recited in claim 43, wherein said inverting amplifier has two output ends respectively connecting with said output circuit device for outputting said pre-amplifying current thereto and connecting with a feedback resistance to feedback said pre-amplifying current to said first transistor through said feedback resistance.

Claim 45 (new): The optical input preamplifier, as recited in claim 44, wherein said output circuit device comprises an amplifying circuit arrangement electrically connected with said pre-amplifying means to amplify said pre-amplifying current, a current-to-voltage converter converting said pre-amplifying current into an output voltage, and a buffering circuit buffering said output voltage as said output signal proportional to said output current of said photodiode.

Claim 46 (new): The optical input preamplifier, as recited in claim 45, wherein said amplifying circuit arrangement comprises a plurality of amplifying circuits electrically connected in a series connection to amplify said pre-amplifying current from said pre-amplifying means.

Claim 47 (new): An optical input preamplifier, comprising:

a photodiode for converting an input optical signal into a photocurrent as an output current;

means for pre-amplifying said output current from said photodiode, wherein said output current is pre-amplified to form a pre-amplifying current, wherein said pre-amplifying means comprises a feedback circuit creating a feedback signal in responsive to said output current from said photodiode to substantially form said pre-amplifying current, and an emitting follower electrically connected to said feedback circuit to output said pre-amplifying current therefrom; and

an output circuit device converting said pre-amplifying current into an output signal, wherein said feedback circuit comprises a first transistor electrically connected

with said photodiode and a second transistor electrically coupled with said first transistor such that when said output current from said photodiode is transmitted to said second transistor through said first transistor, said second transistor forms said feedback signal and transmits back to said first transistor so as to form said pre-amplifying current, wherein said first transistor is a PNP transistor and said second transistor is a NPN transistor, wherein said second transistor is electrically coupled with said first transistor to form a positive feedback circuit of said feedback circuit.

Claim 48 (new): The optical input preamplifier, as recited in claim 47, wherein said feedback circuit further comprises a plurality of diodes electrically coupling between said first and second transistors, wherein said diodes are electrically connected in a series connection.

Claim 49 (new): The optical input preamplifier, as recited in claim 47, wherein said emitting follower comprises a third transistor electrically coupled with said first transistor to receive said pre-amplifying current therefrom and an inverting amplifier for outputting said pre-amplifying current from said third transistor.

Claim 50 (new): The optical input preamplifier, as recited in claim 49, wherein said third transistor is a PNP transistor electrically coupled with said first transistor to direct said pre-amplifying current to said inverting amplifier.

Claim 51 (new): The optical input preamplifier, as recited in claim 50, wherein said inverting amplifier has two output ends respectively connecting with said output circuit device for outputting said pre-amplifying current thereto and connecting with a feedback resistance to feedback said pre-amplifying current to said first transistor through said feedback resistance.

Claim 52 (new): The optical input preamplifier, as recited in claim 51, wherein said output circuit device comprises an amplifying circuit arrangement electrically connected with said pre-amplifying means to amplify said pre-amplifying current, a current-to-voltage converter converting said pre-amplifying current into an output voltage, and a buffering circuit buffering said output voltage as said output signal proportional to said output current of said photodiode.

Claim 53 (new): The optical input preamplifier, as recited in claim 52, wherein said amplifying circuit arrangement comprises a plurality of amplifying circuits electrically connected in a series connection to amplify said pre-amplifying current from said pre-amplifying means.

Claim 54 (new): An optical input preamplifier, comprising:

a photodiode for converting an input optical signal into a photocurrent as an output current;

means for pre-amplifying said output current from said photodiode, wherein said output current is pre-amplified to form a pre-amplifying current, wherein said pre-amplifying means comprises a feedback circuit creating a feedback signal in responsive to said output current from said photodiode to substantially form said pre-amplifying current, and an emitting follower electrically connected to said feedback circuit to output said pre-amplifying current therefrom; and

an output circuit device converting said pre-amplifying current into an output signal, wherein said feedback circuit comprises a first transistor electrically connected with said photodiode and a second transistor electrically coupled with said first transistor such that when said output current from said photodiode is transmitted to said second transistor through said first transistor, said second transistor forms said feedback signal and transmits back to said first transistor so as to form said pre-amplifying current, wherein said emitting follower comprises a third transistor electrically coupled with said first transistor to receive said pre-amplifying current therefrom and an inverting amplifier for outputting said pre-amplifying current from said third transistor.

Claim 55 (new): The optical input preamplifier, as recited in claim 54, wherein said inverting amplifier has two output ends respectively connecting with said output circuit device for outputting said pre-amplifying current thereto and connecting with a feedback resistance to feedback said pre-amplifying current to said first transistor through said feedback resistance.